

Avery Landing Slug Test Analysis

Hydraulic conductivities were calculated using both the Bouwer-Rice and Hvorslev methods for comparison using Aquifer Test. The curve fit used for both the Hvorslev and Bouwer-Rice were the same for each well and can be viewed below. The saturated aquifer thickness for each analysis was assumed to be the amount of water in the well. This was used because many of the water levels were below the top of the screen/filter pack. Saturated aquifer thickness was calculated by subtracting the depth to water from the total well depth (see chart below). I calculated hydraulic conductivities for the slug out for the wells where the Golder slug (not water) was used.

Overall the total range in hydraulic conductivities was 0.31 ft/day to 5.16 ft/day, however the h/h_0 vs. time plot for HC-1R, the highest hydraulic conductivity, has noticeable dip at approximately t_{50} so the analysis may not be as accurate. Without considering HC1R, K values range from 0.31 ft/day to 3.59 ft/day.

Spatially, the highest hydraulic conductivities were at GA-2, GA-3 and GA-4 located on the western end of the property with the highest hydraulic conductivities measured at GA-2 and GA-4. The wells on the eastern end of the property had lower hydraulic conductivities ranging from 0.31 ft/day (EMW-01) to 1.74 ft/day (EMW-02).

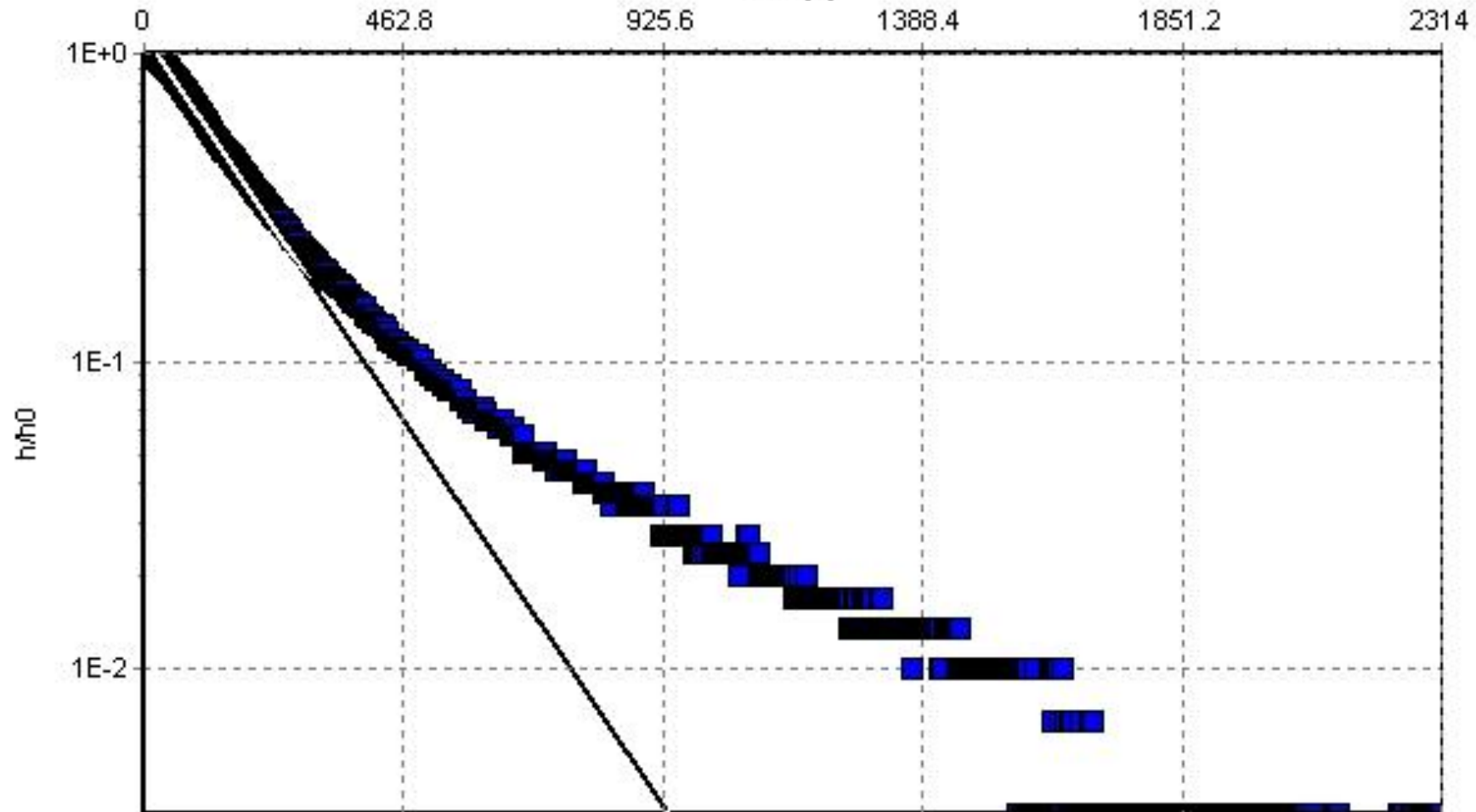
<u>Well Details</u>			
<u>Well ID</u>	Well Depth (ft)	Depth to Water (ft)	Saturated Aquifer Thickness = well depth - depth to water (ft)
EMW-01	12.6	10.25	2.35
EMW-02	16	10.92	5.08
EMW-05	19.5	14.8	4.7
HC-1R	18	13.33	4.67
GA-2	20.1	8.62	11.48
GA-3	26.5	15.96	10.54
GA-4	21	9.87	11.13

<u>Hydraulic Conductivities</u>				
<u>Well ID</u>	<u>Slug In (ft/day)</u>		<u>Slug Out (ft/day)</u>	
	Hvorslev	Bouwer-Rice	Hvorslev	Bouwer-Rice
EMW-01	0.64	0.31		
EMW-02	1.74	1.13		
EMW-05	0.85	0.52		
HC-1R	5.16			
GA-2	3.59	2.53	0.82	0.60
GA-3	1.56	1.12	2.72	2.00
GA-4	3.13	2.25		

EMW-01 [Hvorslev]

Time [s]

■ EMW-01

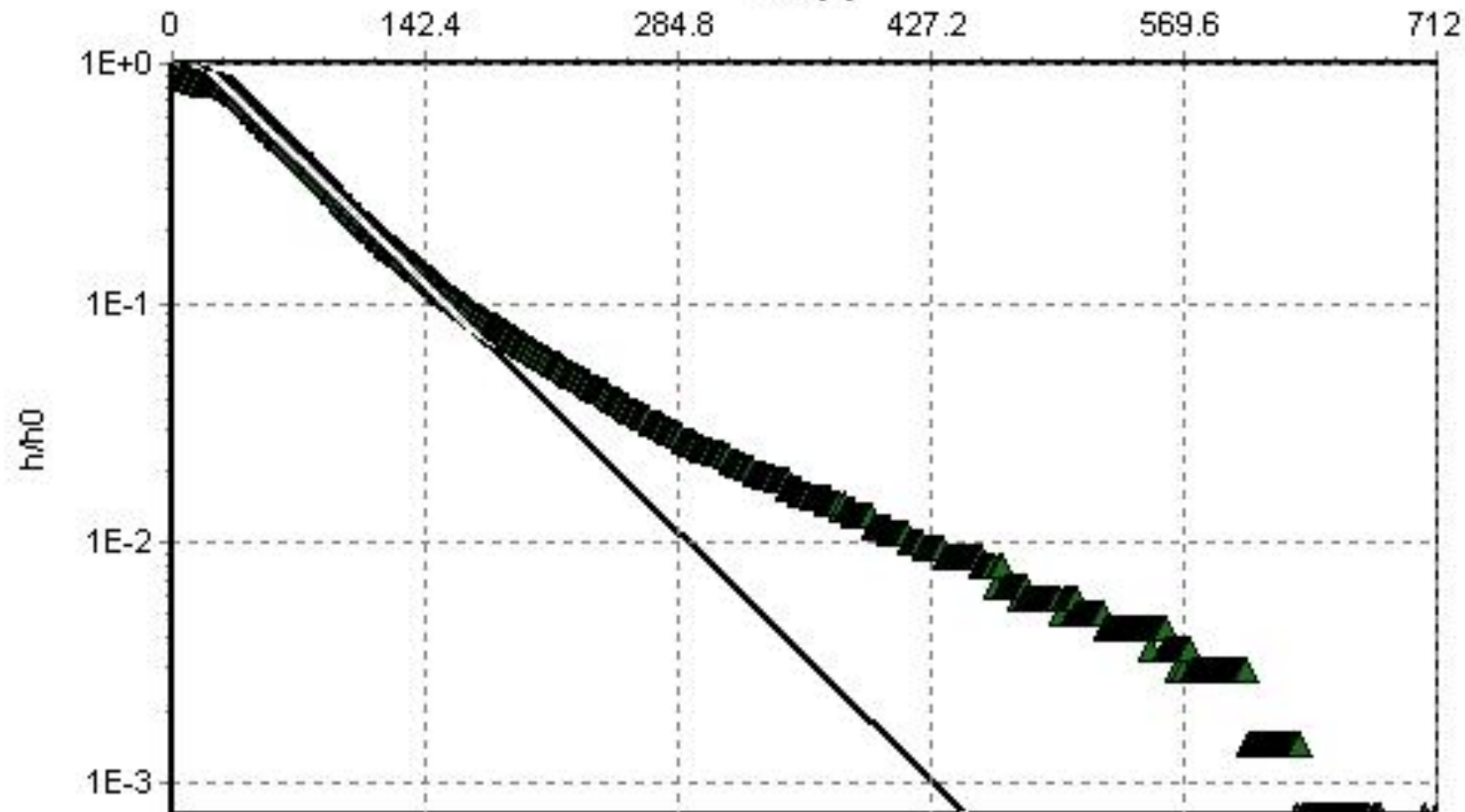


Conductivity: $6.40E-1$ ft/d

EMW-02 [Hvorslev]

Time [s]

▲ EMW-02

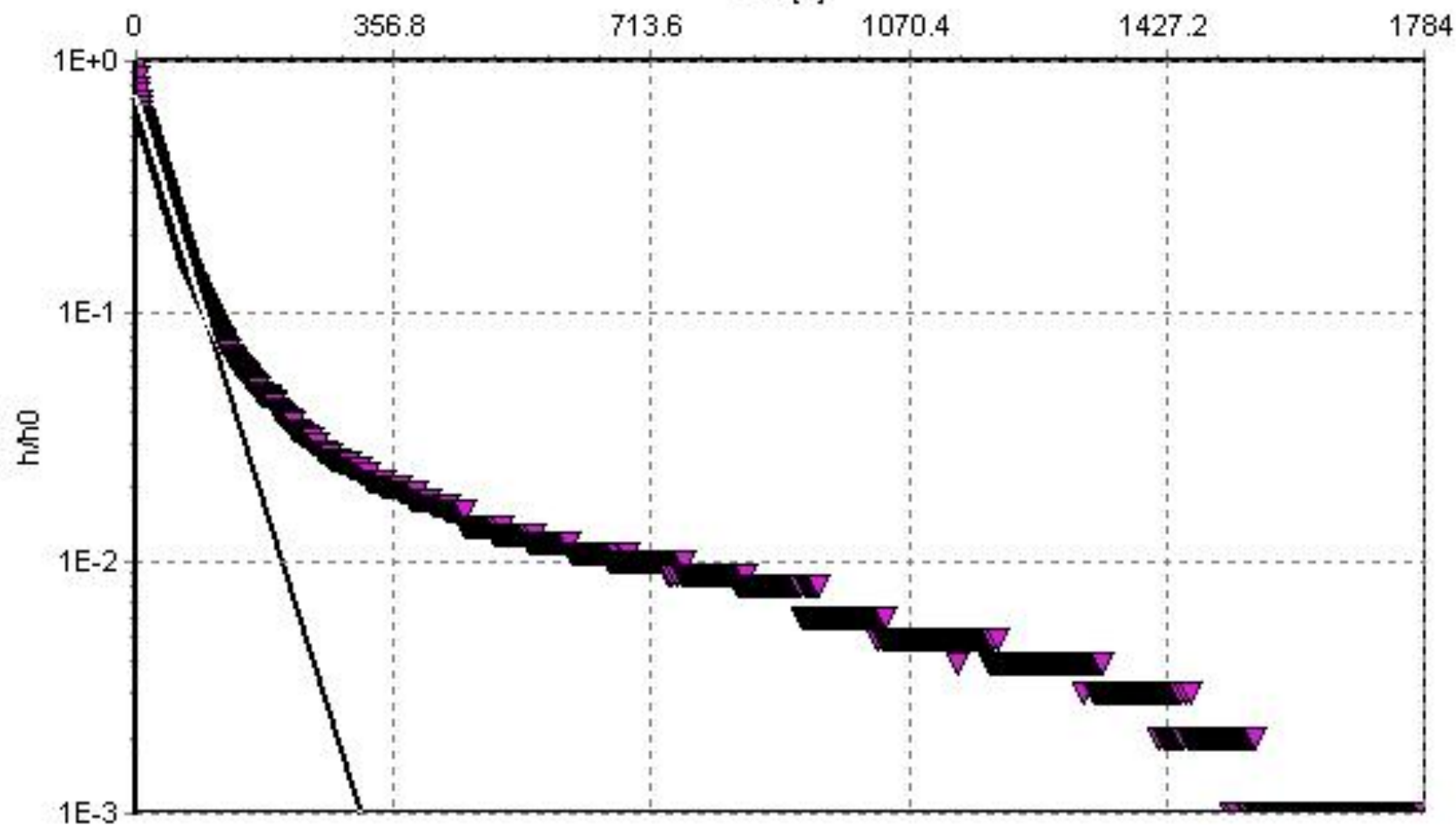


Conductivity: $1.74E+0$ ft/d

EMW-05 [Hvorslev]

Time [s]

▼ EMW-05

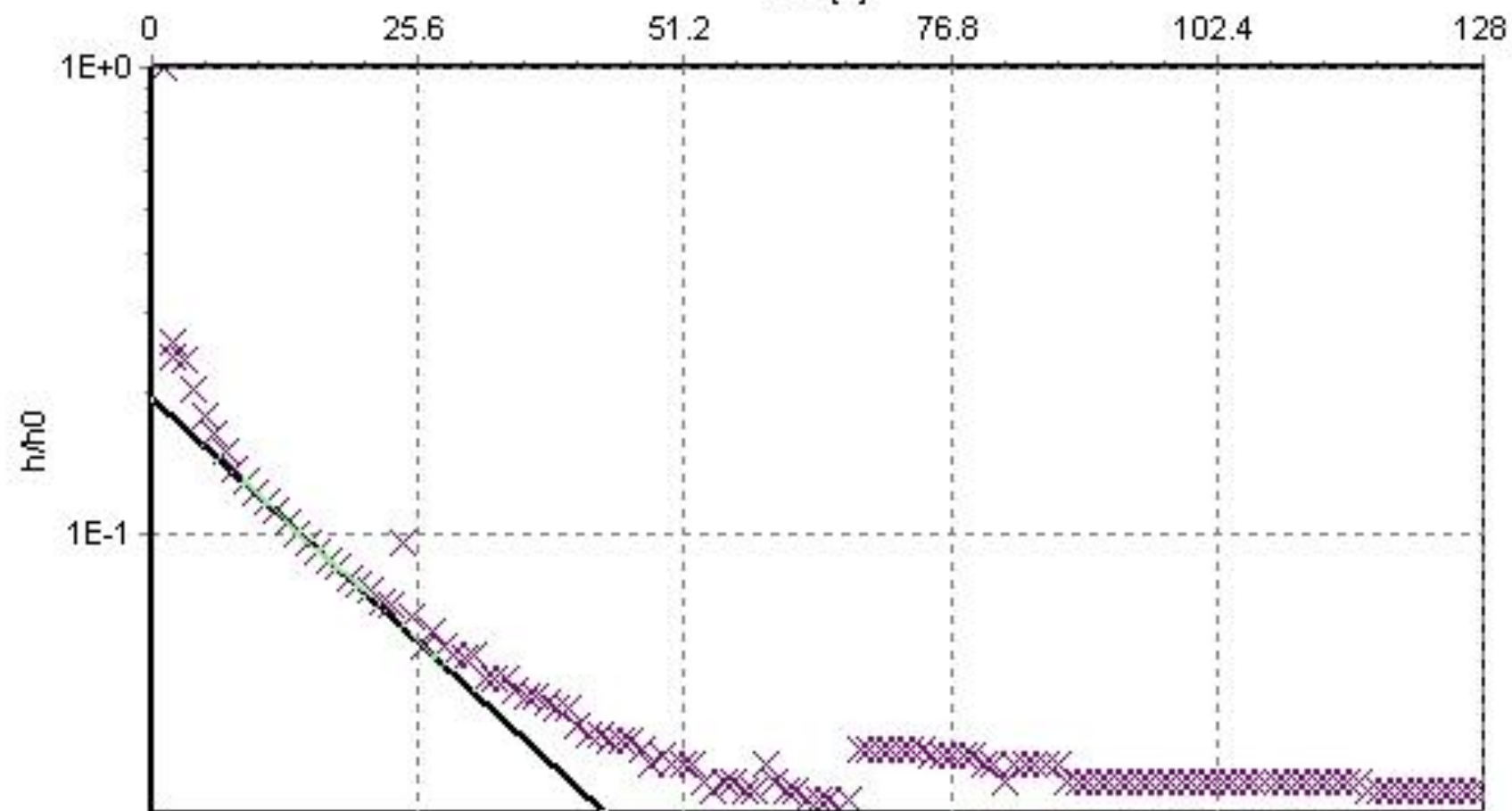


Conductivity: $8.47E-1$ ft/d

GA-2 [Hvorslev]

Time [s]

× GA-2

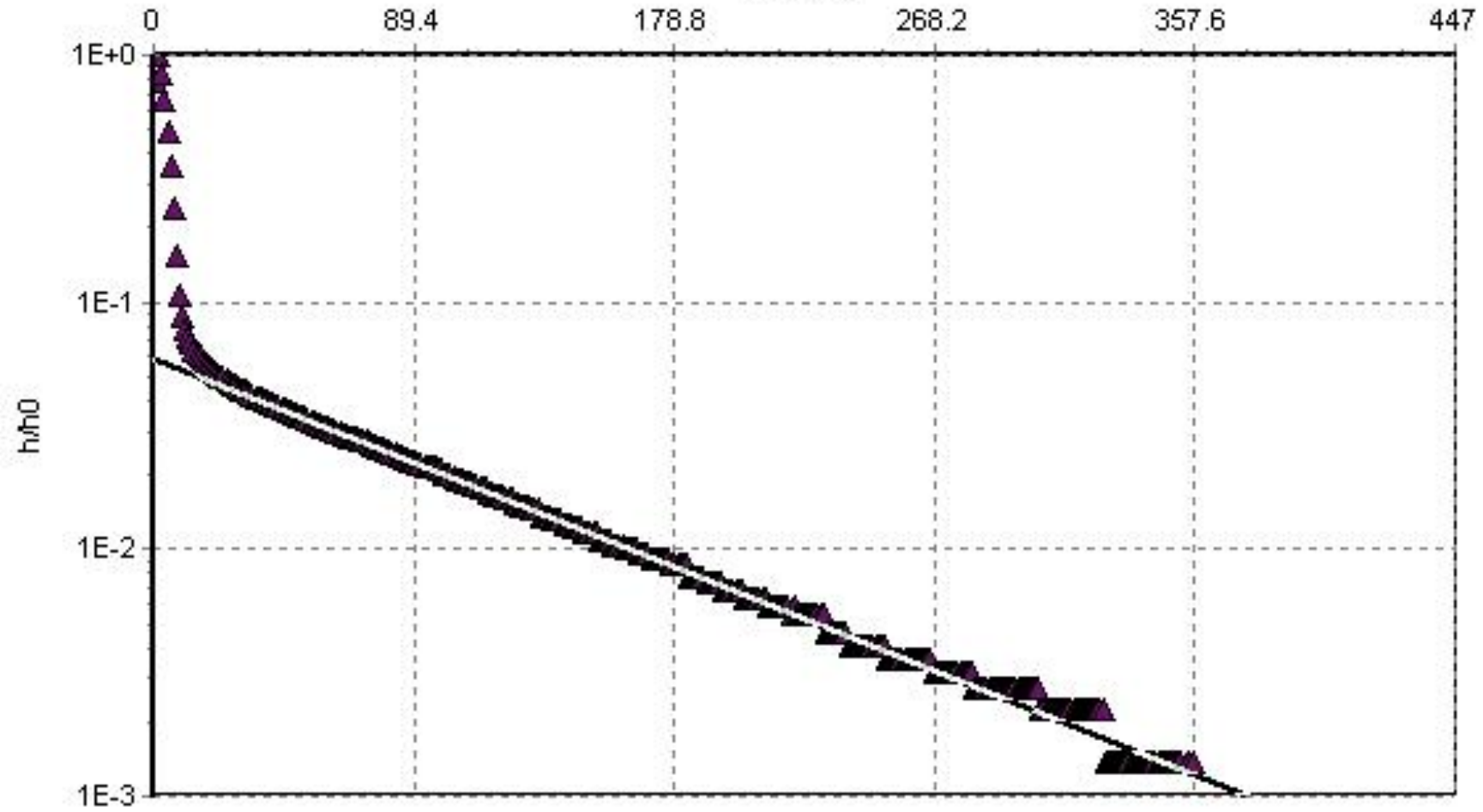


Conductivity: 3.59E+0 ft/d

GA-2 Slug Out [Hvorslev]

Time [s]

▲ GA-2

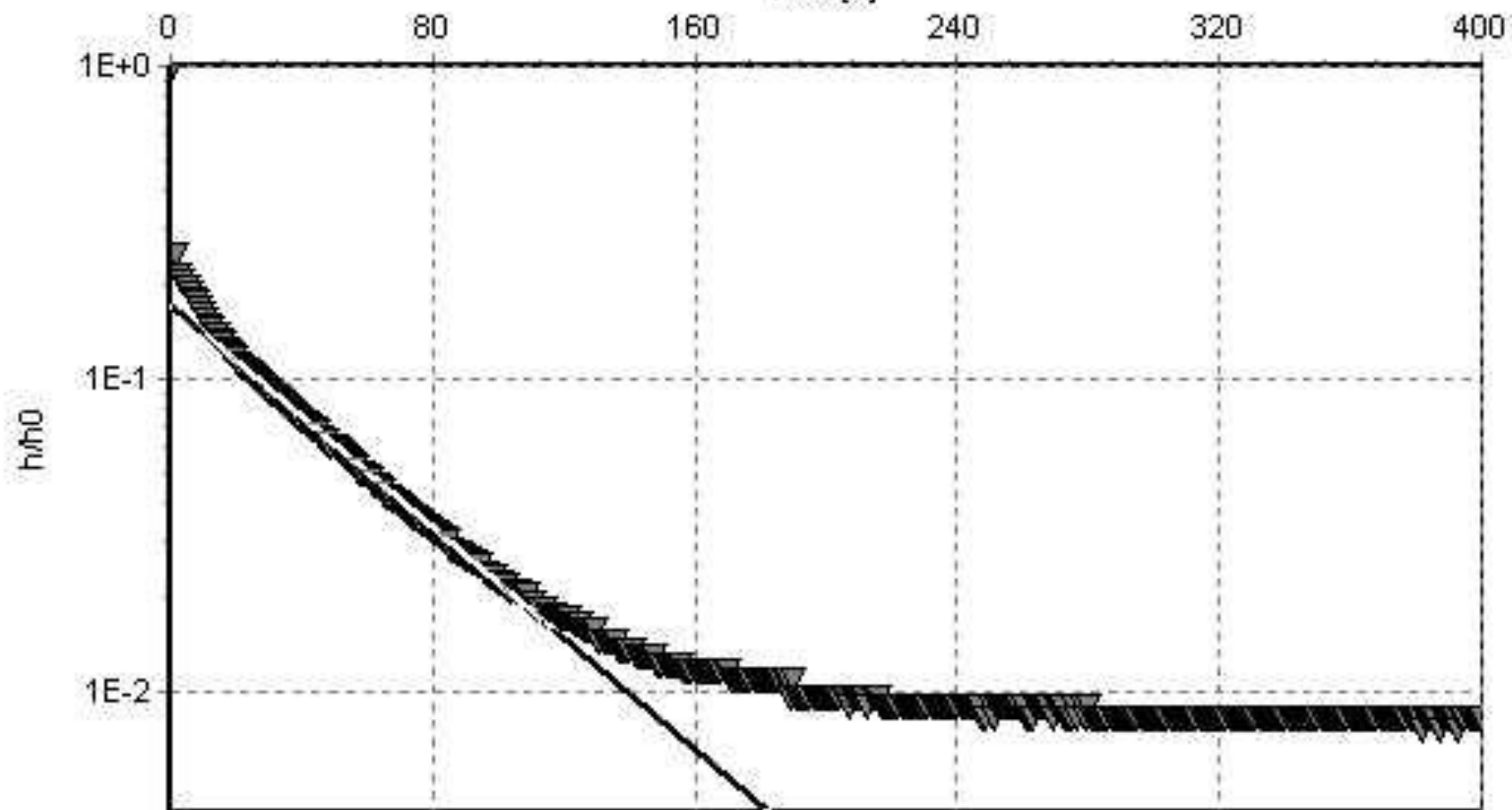


Conductivity: $8.21E-1$ ft/d

GA-3 [Hvorslev]

Time [s]

▼ GA-3

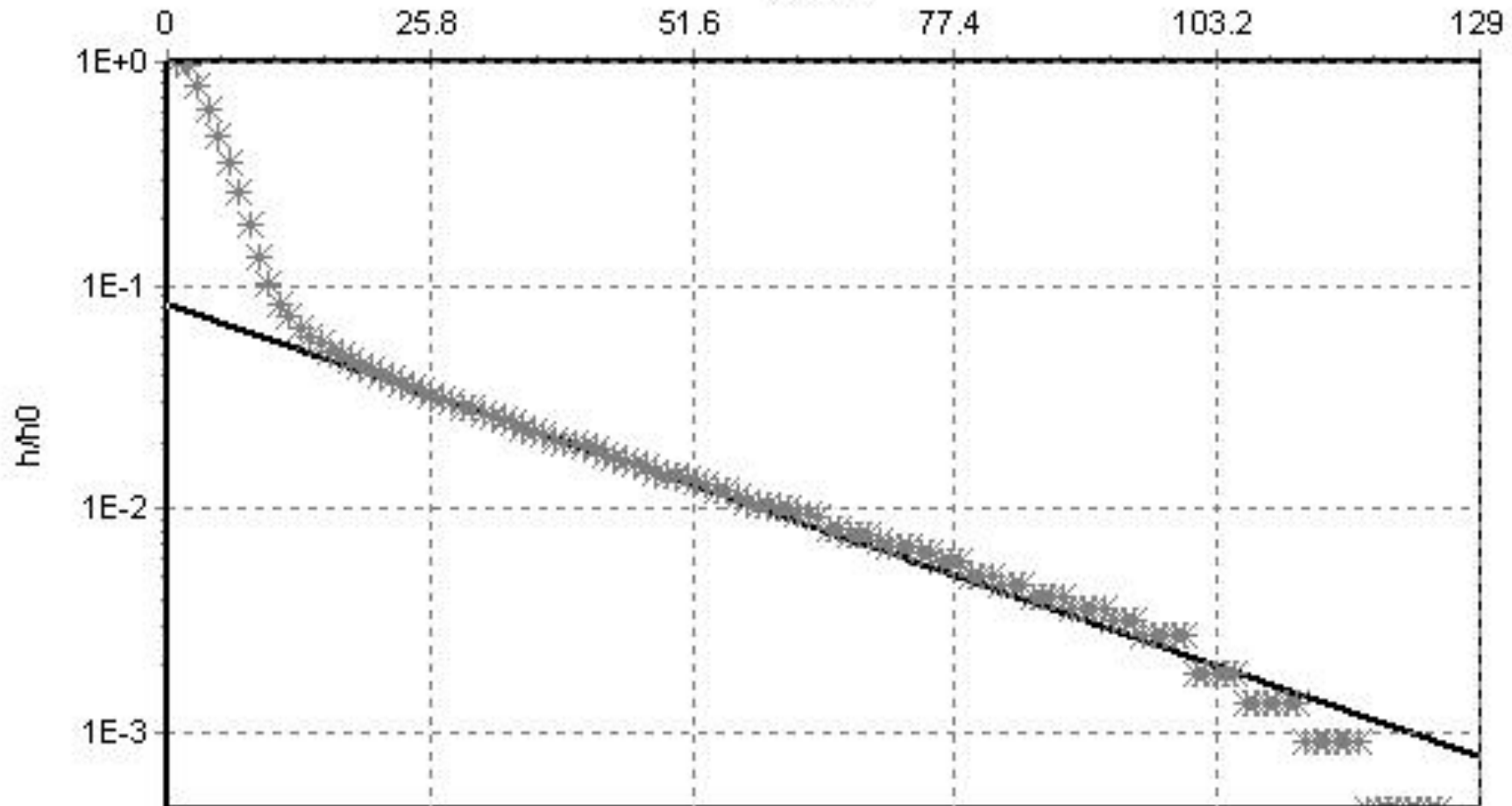


Conductivity: 1.56E+0 ft/d

GA-3 Slug Out [Hvorslev]

Time [s]

* GA-3

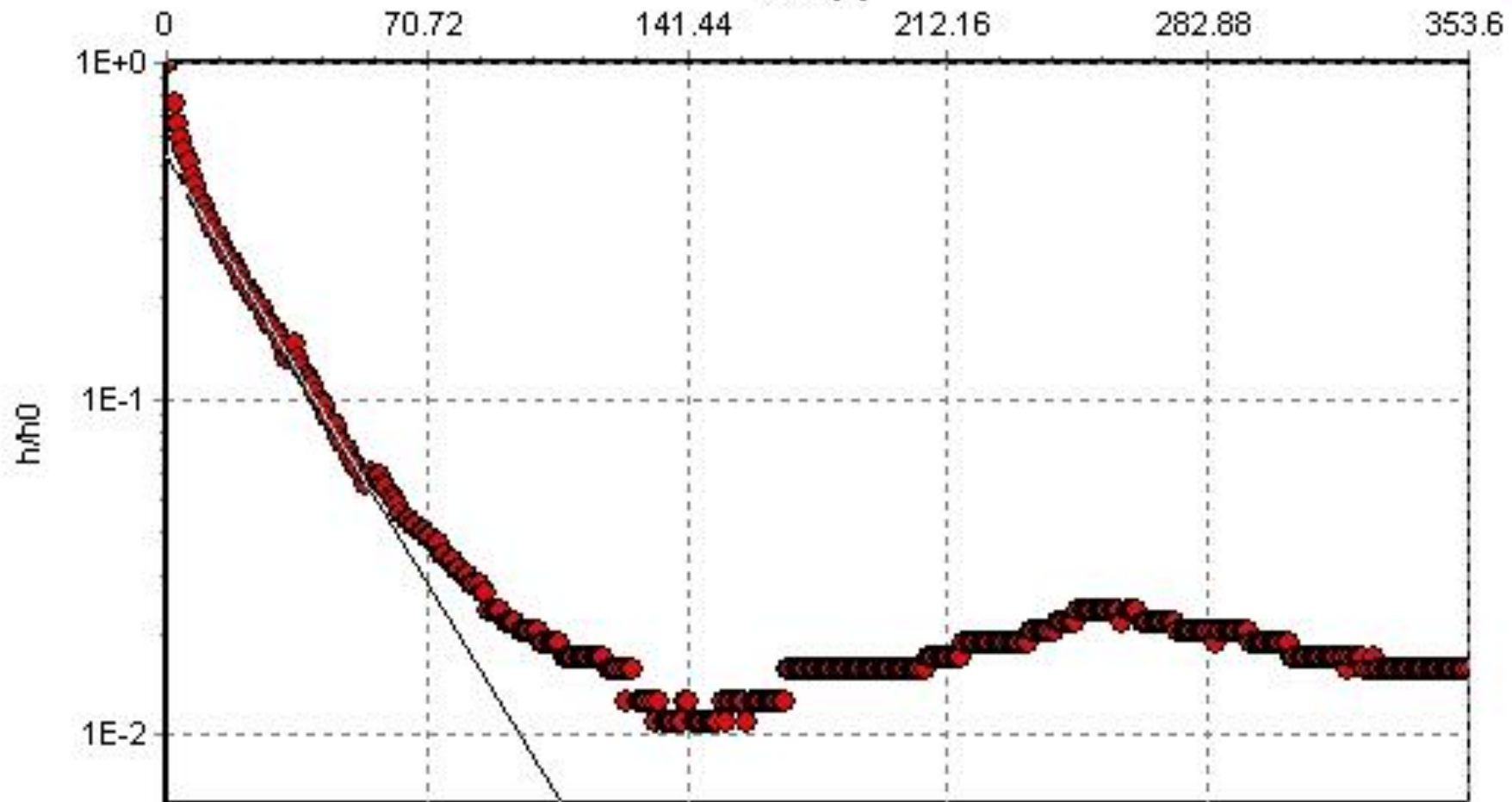


Conductivity: 2.72E+0 ft/d

GA-4 [Hvorslev]

Time [s]

GA-4

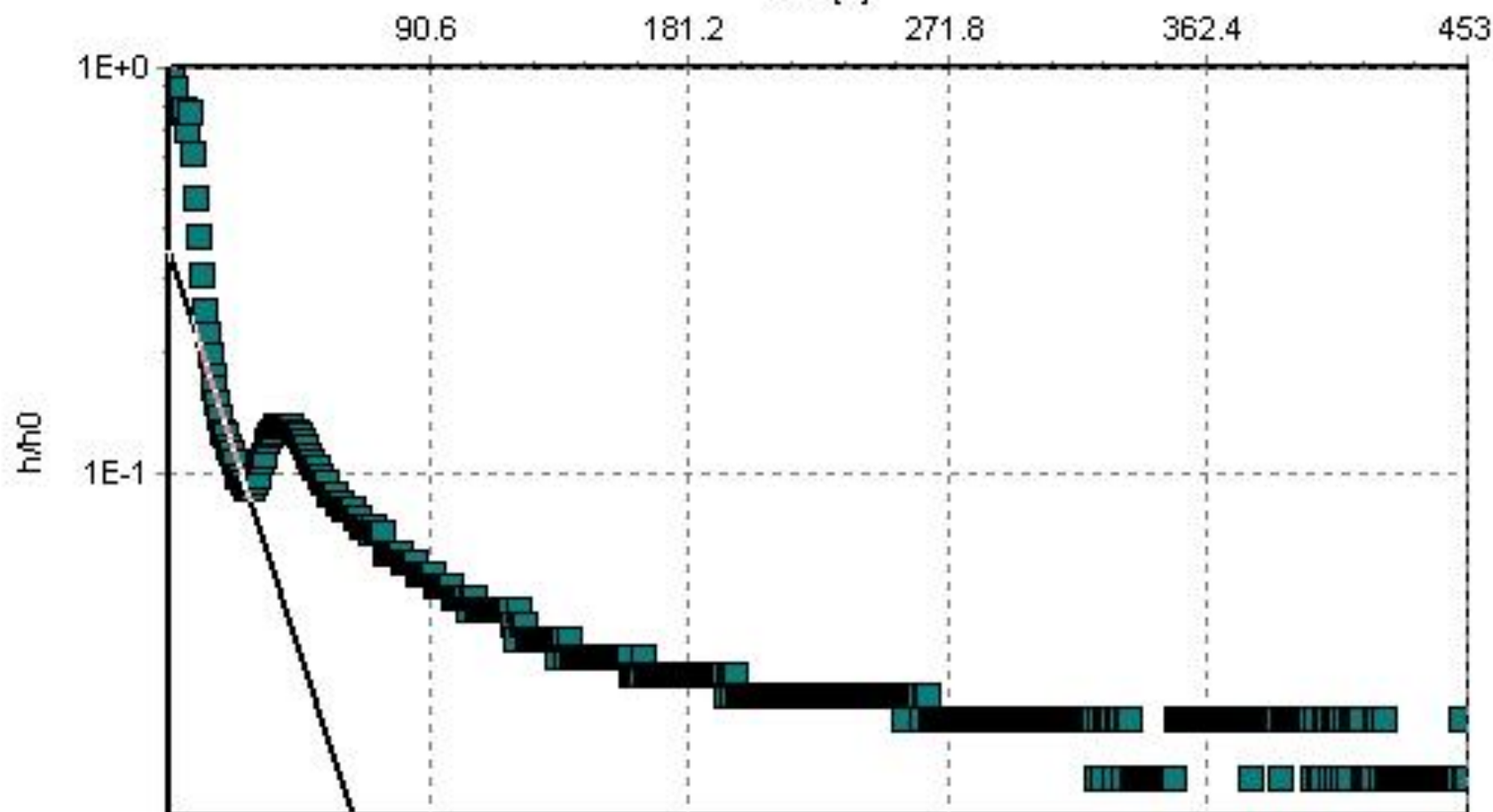


Conductivity: $3.13E+0$ ft/d

HC-1R [Hvorslev]

Time [s]

HC-1R



Conductivity: 5.16E+0 ft/d